Diagnosis and Treatment of Parkinson's Disease

Credit Information

- If you are a **physician** or **social worker in a National Association of Social Workers (NASW) state** and would like to receive CME through the American Geriatrics Society or CE credits through NASW for this event, please complete the pre-test posted here: https://www.research.net/r/parkinsons-pre
  - You will also be required to complete a post-test; a link to this test will appear at the end of the presentation.
- For more information about obtaining CEUs for **social workers in non-NASW states, psychologists, PAs, nurses (NP, APRN, RN, LPN), pharmacists, marriage and family counselors, etc.** via the Centers for Medicare & Medicaid Service's Learning Management System, please visit: https://www.resourcesforintegratedcare.com/GeriatricCompetentCare/2017_GCC_Webinar_Series/Parkinsons

Audio and Platform Information

- The audio portion of the presentation will automatically stream through your computer speakers. Phone dial-in information will automatically be provided for the first 500 registrants and is available upon request for additional registrants.
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Geriatric-Competent Care: Diagnosis and Treatment of Parkinson's Disease

Overview

- This is the third session from the "2017 Geriatric-Competent Care Webinar Series"
- Each session is interactive (e.g., polls and interactive chat functions), with 60 minutes of presenter-led discussion, followed by 30 minutes of presenter and participant-led discussions
- Video replay and slide presentation are available after each session at: https://www.resourcesforintegratedcare.com

Diagnosis and Treatment of Parkinson's Disease

- **Developed by:**
  - The American Geriatrics Society
  - The Lewin Group
  - Community Catalyst

- **Hosted by:**
  - The Medicare-Medicaid Coordination Office (MMCO)
    Resources for Integrated Care

Accreditation

- The American Geriatrics Society is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians and by the National Association of Social Workers (NASW) to provide continuing education for social workers.

- The Centers for Medicare & Medicaid Services is accredited by the International Association for Continuing Education and Training (IACET). The Centers for Medicare & Medicaid Services complies with the ANSI/IACET Standard, which is recognized internationally as a standard of excellence in instructional practices. As a result of this accreditation, the Centers for Medicare & Medicaid Services is authorized to issue the IACET CEU.

Continuing Education Information

If You Are A:	Credit Options	Requirements
Option 1: American Geriatrics Society **Please note:** other health care professionals can receive certificate of participation from AGS		
Social Worker	The American Geriatrics Society designates this webinar for a maximum of 1 Continuing Education (CE) credit hour **Please note:** New York, Michigan, and West Virginia do not accept National CE Approval Programs for Social Work. New Jersey, Idaho, and Oregon do not recognize NASW National Approval	1. Complete the pre-test at the beginning of the webinar 2. Complete the post-test with a score of 80% or higher by midnight June 29, 2017
Physician (MD or DO)	The American Geriatrics Society designates this live educational activity for a maximum of 1 AMA PRA Category 1 CreditTM	1. Complete the pre-test at the beginning of the webinar 2. Complete the post-test with a score of 80% or higher by midnight June 29, 2017
Option 2: Centers for Medicare & Medicaid Services		
Other (social worker in non-NASW states, psychologist, PA, nurse (NP, APRN, RN, LPN), pharmacist, marriage and family counselor, etc.)	The Centers for Medicare & Medicaid Services (CMS) is authorized by IACET to offer CEUs. CEUs will be awarded to participants who meet all criteria for successful completion of this educational activity	Complete the post-test through CMS' Learning Management System by midnight July 17, 2017

Support Statement

- This webinar is supported through the Medicare-Medicaid Coordination Office (MMCO) in the Centers for Medicare and Medicaid Services (CMS) to ensure beneficiaries enrolled in Medicare and Medicaid have access to seamless, high-quality health care that includes the full range of covered services in both programs. To support providers in their efforts to deliver more integrated, coordinated care to Medicare-Medicaid enrollees, MMCO is developing technical assistance and actionable tools based on successful innovations and care models, such as this webinar.

- To learn more about current efforts and resources, visit Resources for Integrated Care at: **https://www.resourcesforintegratedcare.com**

Introductions

- **Liana S. Rosenthal, MD**

  Assistant Professor, Department of Neurology, JHU School of Medicine

  Director, Clinical Core of the Morris K. Udall Parkinson's Disease Research Center of Excellence

  Ph.D. Candidate, JHU Bloomberg School of Public Health

- **Gregory Pontone, MD, MHS**

  Associate Professor in the Department of Psychiatry at Johns Hopkins University School of Medicine

- **Arita McCoy, MSN, CRNP**

  Nurse practitioner at the Johns Hopkins Parkinson's Disease and Movement Disorder Center

- **Maryann Powderly**

  Family caregiver

Webinar Outline/Agenda

- Polls
- Update on Parkinson's Disease
- Neuropsychiatric Disorders in Parkinson's Disease
- Patient and Family Support in Parkinson's Disease
- Q&A
- Evaluation

Webinar Learning Objectives

Upon completion of this webinar, participants will be able to:

- Identify common signs and symptoms of Parkinson's Disease
- Demonstrate knowledge of common treatment options

Update on Parkinson's Disease

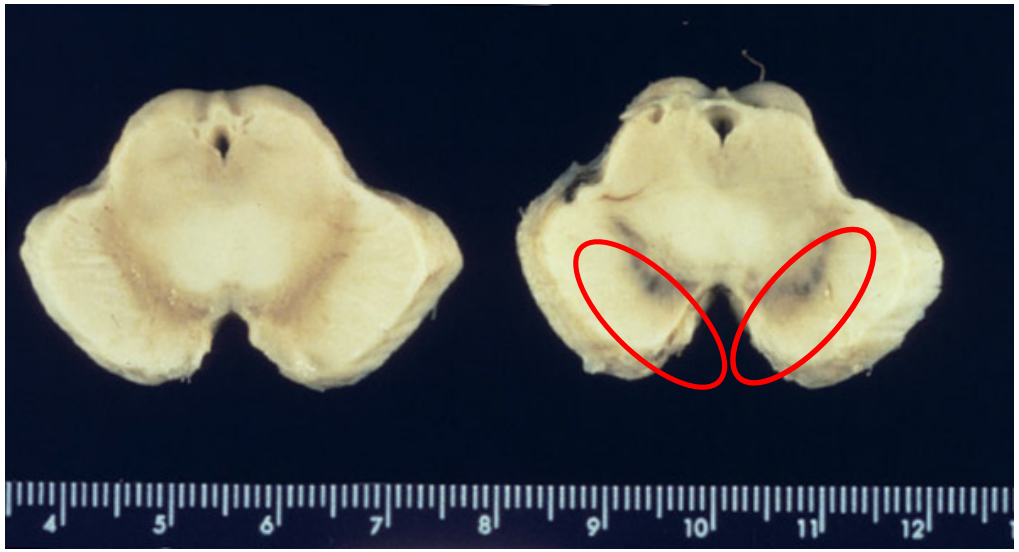
Liana S. Rosenthal, MD

Parkinson's Disease vs. Parkinsonism

- PD
  - Progressive neurodegenerative disease that results in nerve cell dysfunction and loss
  - Pathologic hallmark: the Lewy Body
- Parkinsonism
  - A set of symptoms that looks like PD
  - Underlying causes of Parkinsonism are numerous

Pathophysiology of PD

- Loss of cells in the substantia nigra
- Substantia nigra degeneration causes dopamine deficiency
- Dopaminergic therapy relieves motor symptoms



http://pathology.mc.duke.edu/neuropath/CNSlecture4/CNSlecture4.htm

Parkinson's Disease

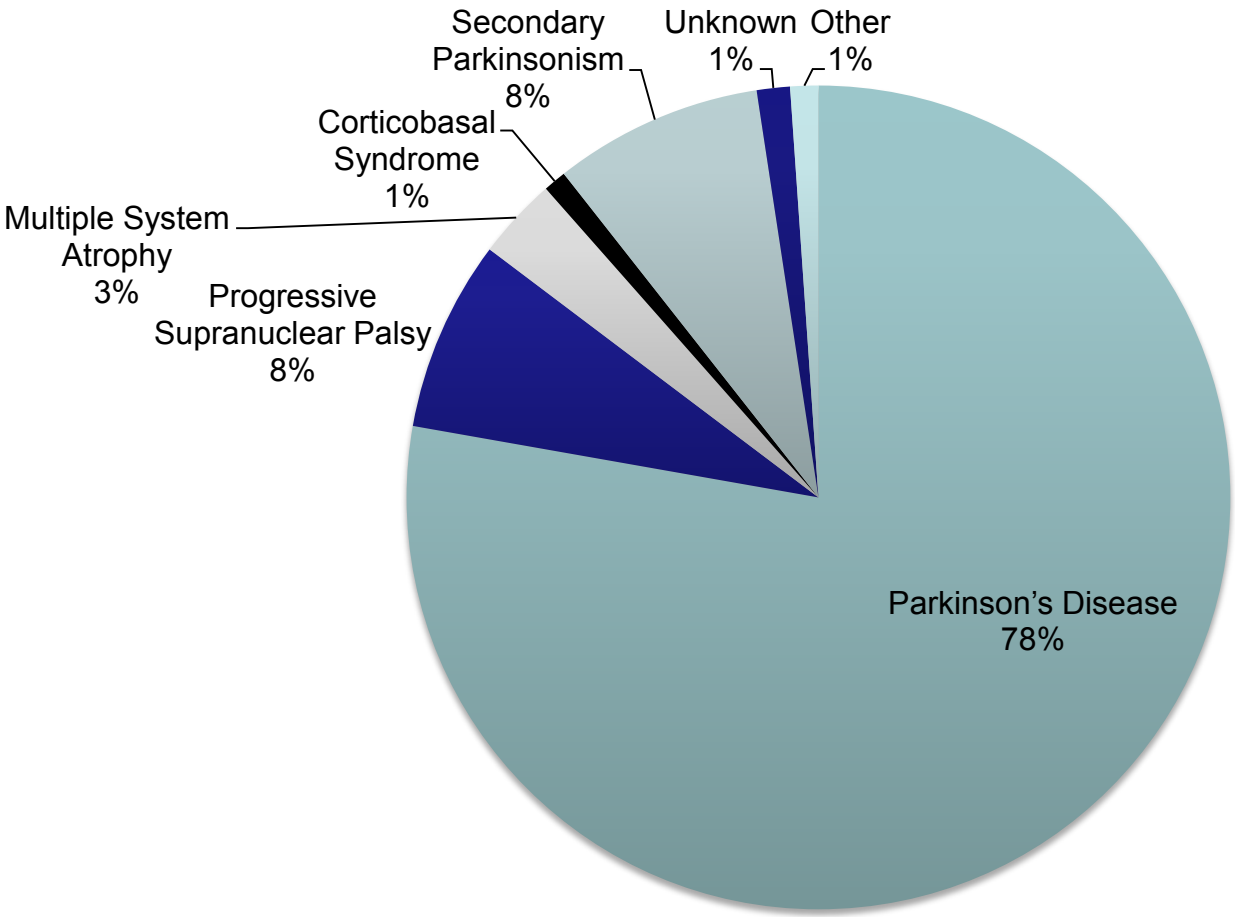
- Bradykinesia (slowness of movement)
- At least one of the following:
  - Muscular rigidity
  - Rest tremor
  - Postural instability not from other causes
- Important point
  - 25% of patients with Parkinson's Disease do NOT have a rest tremor

Hughes et al., JNNP 1992, 55: 181-4. and Hughes et al., Arch Neurol 1993, 50: 140-148

Parkinson's Disease: Common Early Complaints

- Writing smaller; harder to use buttons
- Slowness, "weakness", limb not working well
- Stiff or achy limb
- Stoop, shuffle-walk, "dragging" leg(s)
- Trouble getting out of chairs or turning in bed
- Low or soft voice
- Non-motor: loss of smell, dream enactment, constipation, anxiety, depression, "passiveness"

Most Parkinsonism is PD



Adapted from Stacy and Jankovic, Neurol Clin, 1992 10(2), 341

Drug-Induced Parkinsonism

- Drugs that reduce dopamine transmission
- Antipsychotics/anti-nausea: risperidone, haloperidol, metoclopramide, promethazine, prochlorperazine, etc.
- Can be indistinguishable from PD
- Management includes reducing or discontinuing offending agent
  - Can take months to resolve

New Treatment Paradigm: PD is more than Motor Symptoms

- 99 percent of patients reported non-motor symptoms
  - Non-motor symptoms increase with time
- Depression and apathy most frequently identified determinant of health related quality of life
- Motor function severity is also important

Soh et al. Parkinsonism and Related Disorders, 2011
Priamo study, Movement Disorders, 2009.

Nonpharmacologic Therapy for PD

- Regular exercise program
- Physical therapy
  - To restore confidence in walking and maintaining balance
  - To select a cane or walker, if needed
- Home visit by an occupational therapist to plan placement of assistive devices

What are Non-motor Symptoms?

- **Psychiatric**
  - Depression, anxiety, apathy, behavior
- **Sleep**
  - Insomnia, dream disorder, sleepy during the day
- **GI**
  - Drooling, nausea, constipation, abnormal swallow
- **Pain (leg)**
- **Fatigue**
- **Urinary**
  - Incontinence, urgency, going at night
- **Cardiovascular/Dizziness**
- **Cognitive Function**
  - Concentration, memory, executive dysfunction, hallucination
- **Other**
  - Abnormal sense of smell/taste, vision trouble, change in weight, sexual dysfunction, falls, respiratory (cough/SOB)

Priamo study, Movement Disorders, 2009.

Commonly Used Medications to Treat PD

- **MAOi-b inhibitors**
  - Rasagiline, Selegeline
- **MAOi-b inhibitor plus**
  - Safinamide
- **Dopamine agonists**
  - Pramipexole, ropinerole, rotigotine
- **Carbidopa/levodopa**
  - Carbidopa/levodopa IR
  - Carbidopa/levodopa CR
  - Rytary (both IR and CR)
- **COMT inhibitors**
  - Entacapone
- **Antipsychotics**
  - Quetiapine, pimavanserin, clozapine
- **Cognitive**
  - Donepezil (Aricept), Rivastigmine (Exelon), Galantamine (Razadyne)
  - Memantine (Namenda)
- **Amantadine**
- **NEVER use**
  - Haloperido, aripiprazole, etc Metoclopramide

Common Complications with Levodopa After Four-Six Years

- About 40 percent dyskinesias (impairment of voluntary movement)
- About 40 percent motor fluctuations
- Risk factors include:
  - Younger age at PD onset
  - Higher levodopa dosage
  - Longer disease duration

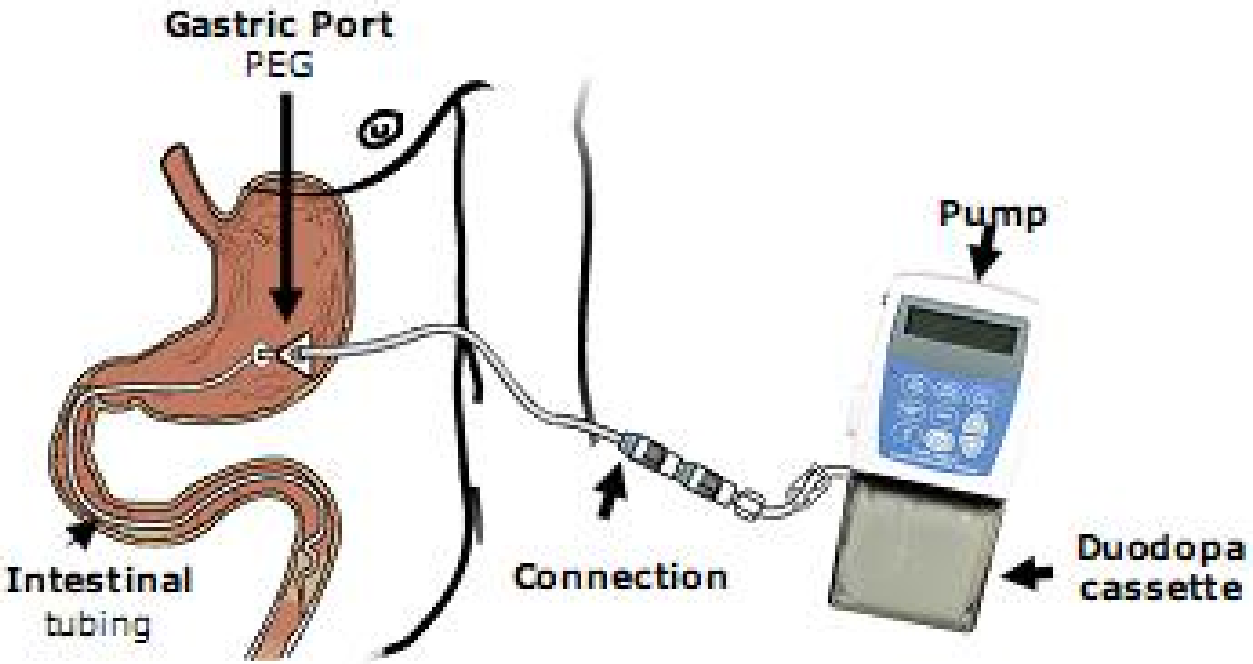
Pahwa et al., Neurology 2006 66: 983 and Ahlskog and Muenter Mov Disorders 2001 16: 448

Patient Selection for Advanced Surgical Treatments

- A PD patient who:
  - Has mid-to-advanced PD
  - Sustained good response to levodopa medications
  - Fluctuates in levodopa response (on/off), often with dyskinesia
- May be a good candidate for:
  - Deep Brain Stimulation surgery (DBS)
  - Levodopa Intestinal gel

Adapted from Bronstein et al., Arch Neurol, 2011; 68(2): 165-171

Levodopa-Carbidopa Intestinal Gel



Summary

- The new diagnostic criteria should better reflect our current understanding
- There are some new medications and surgical treatments available to treat PD, but they still go after similar mechanisms of action

Take Home Points

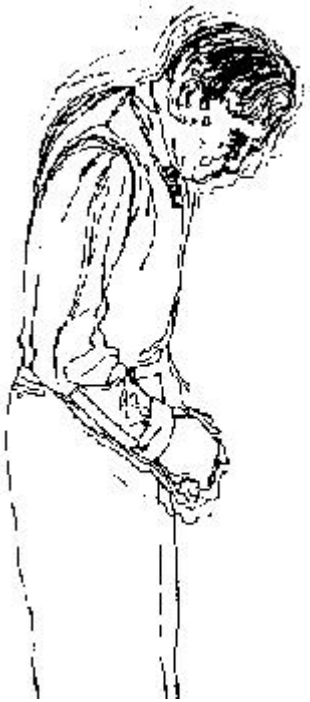
- PD patients often have complicated medication regimens and non-motor symptoms that interact with their other meds and diseases
- Many symptoms may be attributed to PD
  - “Patients can have as many diseases as they damn well please.” --John Hickam, MD

Neuropsychiatric Disorders in Parkinson's Disease (PD)

Greg Pontone, MD, MHS

Neuropsychiatric Symptoms and PD

- End of 19th century
  - Scattered reports first appeared of personality and mental changes in PD
- Presence of cognitive decline was considered "accessory"
- Essay on the Shaking Palsy: "…the senses and intellects being uninjured" - James Parkinson, 1817



Non-motor Symptoms of PD

- Olfactory loss, up to 90 percent of PD
- Dysautonomia, up to 70 percent of PD (constipation, gastroparesis, ED, OH)
- Neuropsychiatric symptoms: mood, and anxiety disorders 40-50%, psychosis, impulse control
- Sleep disturbances >30 percent (e.g. RBD)
- Cognitive impairment; up to 40 percent have selective deficits at diagnosis and 50 percent are demented within 10 years of motor symptom onset

Gonera et al 1997, Tolosa et al 2009, Yarnell et al 2014

Depressive Disorders in PD

- Epidemiology
  - ~40% prevalence
  - Several types of depressive disturbances
  - Rates of recurrence or treatment resistance unclear
  - Anxiety disorders often co-occur

Reijnders 2008; Mayeux, 1981; Starkstein, 1992; Meara, 1999; Global PD Survey, 2002; Weintraub 2004; Even 2012; Shakeri 2015; Ghaddar 2016; Reidel 2016

Course of Depression in PD

- NET-PD Study/Neuroprotective Treatment Trials
  - 47 percent remitted within 6 months
  - Mild depressive symptoms predicted
    - Development of more severe symptoms
    - (RR=6.16 [95%CI 2.14.17.73])
  - Sx severity, older age, longer PD duration predicted failure to remit (HR 0.83-0.92)

Ravina et al., 2009

National Parkinson Foundation

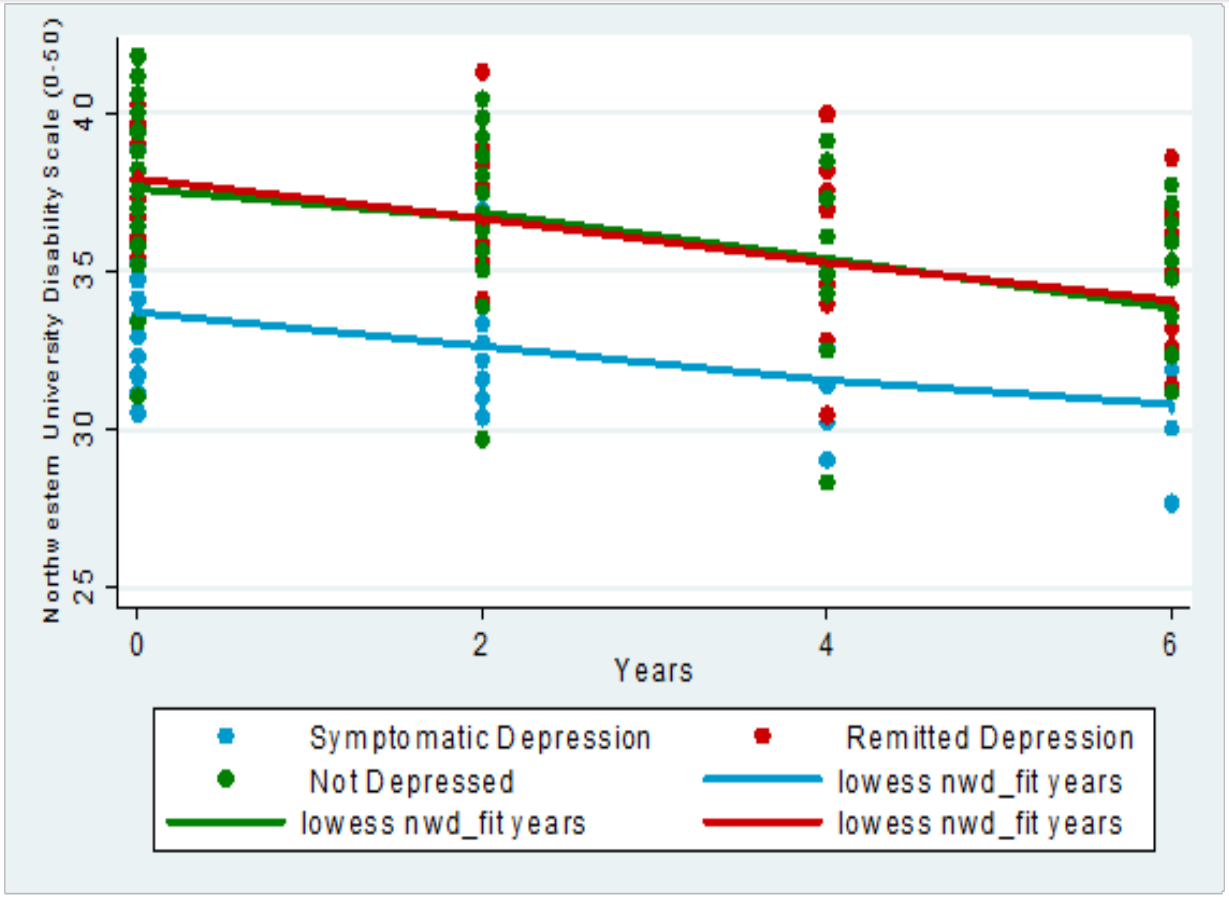
- Data from the largest, ongoing study of people with PD reveals depression has biggest impact on quality of life
- The impact of depression on quality of life is almost twice that of the motor impairments

Longitudinal Effect of Depression on Physical Disability in PD (n=136)

- The graph on the following slide shows group differences in physical Activities of Daily Living (ADLs) (NWDS) at baseline and 2-year follow-up intervals
- Northwestern Disability Scale (NWDS, max score=50)
  - Walking
  - Hygiene
  - Eating/Feeding
  - Dressing
  - Speech
- Note: Lower Scores ∞ Greater Disability

Pontone et al. 2015

Longitudinal Effect of Depression on Physical Disability in PD (n=136) (continued)



At any assessment point, subjects with a symptomatic depressive disorder have greater disability, averaging 3.8 points lower score in the NWDS. (GEE Regression: SD vs ND, B=-3.8, p<.001)

Pontone et al. 2015

Prevalence of Anxiety and Anxiety Disorders in PD

- Up to 55 percent have clinically significant anxiety symptoms
- 31 percent have an anxiety disorder (e.g. Diagnostic and Statistical Manual of Mental Disorders (DSM))
- Certain types of anxiety may be associated with the neurodegenerative process and/or treatment of PD
- Non-episodic (e.g. generalized disorders) more common than episodic

Yamanishi et al 2013, Broen M et al 2016

Anxiety Disorders

- Excessive worry, out of character compared to earlier in life
- Feelings of restlessness or unease
- Anxiety in anticipation of upcoming events
- Panic or panic-like fear that occurs episodically, sometimes just before the next dose of Parkinson's medication

Impact of Anxiety Disorders

- May worsen quality of life to greater extent than motor symptoms
- Higher levels of care dependency
- Increased caregiver distress
- More frequent freezing and on-off fluctuations

Carod-Artal et al 2008; Chen and Marsh 2014; Sagna A et al 2014

Treatment of Anxiety Disorder in PD

- Limited evidence from randomized control trials (RCT)
- For the general population, treatments include cognitive behavioral therapy (CBT), antidepressants and benzodiazepines
- Benzodiazepines may have additional risks in PD
- Optimizing motor function and addressing motor fluctuations is important

Treatment of Depression in PD

- Staying active and exercising will help depression and improve motor function
- Talk therapy, e.g., cognitive behavioral therapy
- Antidepressant medication

Dashtipour et al 2015

Evidence-based Depression Treatment for Depression in PD

- Recent systematic review and meta-analysis
- SSRIs and CBT have best evidence for improving depression in Idiopathic Parkinson's Disease (iPD)

Bomasang-Layno et al 2015, Xie et al 2015

NINDS - Diagnostic criteria for PD Psychosis (PDP)

- Include ≥ 1 of the following
  - Illusions
  - False sense of presence
  - Hallucinations (visual and nonvisual)
  - Delusions
- Symptoms of psychosis
  - Occur after the onset of PD
  - Recurrent or continuous for 1 month
- Exclude alternate causes of PDP

Ravina B, et al. *Mov Disord*. 2007;22(8):1061-1068.

Psychotic Phenomenon in PD

- Illusions – misperception of an external stimulus
- Hallucinations – sensory perception in the absence of an external stimulus
- Delusions – false, fixed, idiosyncratic belief
- Clinical categories – with insight and without
- Sleep related – vivid dreaming and hypnopompic hallucinations

Impact of PDP

- Worsening quality of life
- Major reason for discontinuing (or lowering) motor symptom drugs
- Leading cause for hospitalization and nursing home placement
  - More significant risk factor than motor severity or memory problems
  - Increased risk for mortality

1. Gallagher DA, et al. *Mov Disord.* 2010;25(15):2493-2500.
2. Olanow CW, et al. *Neurology*. 2001;56(11)(suppl 5):S1-S88.
3. Jakel RJ, et al. *J Parkinsonism Restless Legs Syndrome*. 2014;4:41-51.
4. Goetz CG, Stebbins GT. *Neurology*. 1993;43(11):2227-2229.
5. Forsaa EB, et al. *Neurology*. 2010;75(14):1270-1276.

PDP Management Strategies

- Treatment of underlying medical illness, if needed
- Discontinuation of medications that may exacerbate psychosis (e.g., pain, bladder, and CNS-acting medications)
- Reduction of PD medications
- Use of antipsychotic therapy
- Treatment with cholinesterase inhibitors
- Nonpharmacologic techniques to address PDP

Goldman JG, Holden S. *Curr Treat Options Neurol*. 2014;16(3):281.

Non-pharmacologic Management Strategies

- Home modifications (e.g., night lights)
- Discussion, education
- Coping strategies
  - Visual techniques
  - Cognitive techniques
  - Interactive techniques

Diederich NJ, et al. *Mov Disord*. 2003;18(7):831-832.
Ballard C, et al. *Am J Geriatr Psychiatry*. 2009;17(9):726-733.

Patient and Family Support in Parkinson's Disease

Arita McCoy, MSN, CRNP

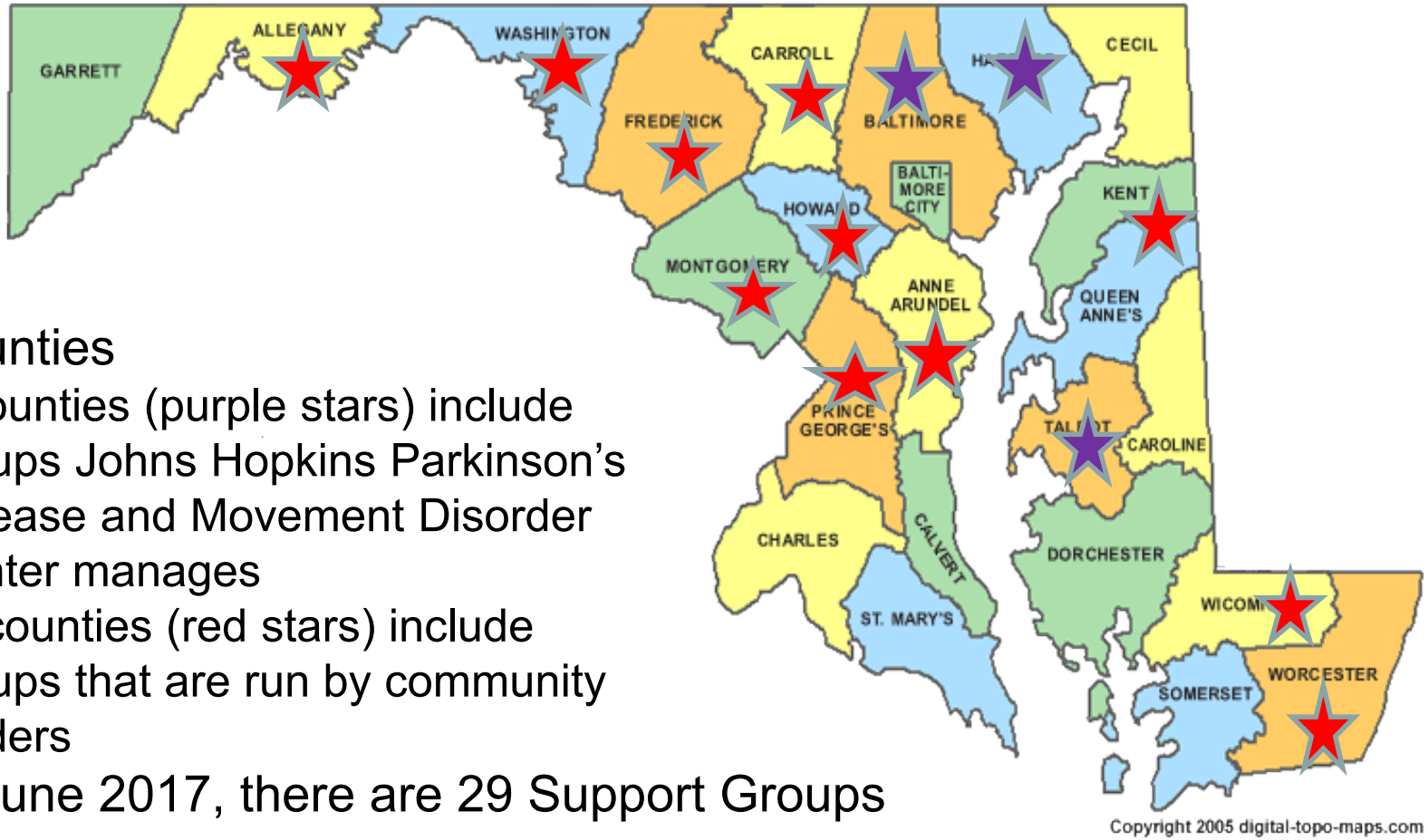
Healthcare Needs in PD Change Over Time

- Early
  - Education
  - Mild symptom control
  - “Proactive” therapies
- Mid-Stage
  - More focused symptom control
  - Specialty care referral
- Advanced
  - Cognitive issues
  - Activities of Daily Living assistance

Education/Support Groups

- Often are county/city/region specific
- Offer community based education and support spanning a multitude of topics
- Allow patients/family members to become self advocates and identify community resources

Support Groups in Maryland



- 14 Counties
  - 3 counties (purple stars) include groups Johns Hopkins Parkinson's Disease and Movement Disorder Center manages
  - 11 counties (red stars) include groups that are run by community leaders
- As of June 2017, there are 29 Support Groups

Importance of Therapies

- Physical Therapy
  - LSVT BIG, PWR!, Balance/Gait Training
- Occupational Therapy
  - LSVT BIG, Home Modification, Assistive Devices
- Speech Therapy
  - LSVT LOUD, Swallow Evaluation, Cognitive Training

Community Exercise Programs

- Rock Steady Boxing
- Dance for PD
- Disease Specific Exercise Courses

The Neurologist

- Primary person for PD treatment
- Will often refer out for other specialty care
  - Therapy, Psychiatry, Urology, GI, Sleep
- Should also be advised of all medication changes
- Consider Movement Disorder Specialist
  - May be primary or once yearly consultant
- Most important is competency, accessibility, and ability to communicate
- Second opinion is ok!
- People with PD benefit from a comprehensive care team

The Primary Care Physician

- Should be the “hub” of all medical issues
- The person that each specialist reports to
- Request that all records are sent to the PCP
- Geriatric internists specialize in comorbidities/polypharmacy
- Ensure that this is a trustworthy, accessible, local, comfortable relationship

Hospitalization in PD

- Reasons for ER visit/hospital stay
  - Infection
  - Cognitive changes (delirium, hallucinations)
  - Falls/injuries
  - Scheduled surgery
- People with PD hospitalized 50 percent more than their peers
- Often causes disease worsening
  - Medications given off schedule
  - Contraindicated drugs administered
  - Therapy delayed or ineffective

Be Aware in Care!

- Aware in Care Bag—Pack your bag with your PD medication and your Aware in Care materials
- Hospital Action Plan—Read about how to prepare for your next hospital visit—whether it is planned or an emergency
- PD ID Bracelet—Wear your bracelet at all times in case you are in an emergency situation and cannot communicate
- Medical Alert Card—Fill in your card with emergency contact information and place in your wallet
- Medication Form—Complete this form and keep copies

What's in the Kit?

- PD Fact Sheet—Share the facts about PD with hospital staff and ask that a copy be placed in your chart
  - I Have Parkinson's Reminder Slips—Share vital information about PD with every member of your care team in the hospital
- Thank You Card—Present this card to a staff member who provides high quality care
- Magnet—Use this magnet to display a copy of your Medication Form in your hospital

When Additional Help is Needed

- Caregiver Strain
  - Multidimensional Caregiver Strain Index (MCSI)
- Safety Issues
  - Falls, mobility challenges, balance
- Cognitive Problems
  - Memory causing medication neglect
  - Hallucinations/delusions causing behavioral challenge

When Additional Help is Needed

- Bring in “care team”
  - Caregivers, family, friends
- Moving is a difficult decision for both parties
- Continuing care retirement community
  - Great option
- Not a “failure” of either party
- Realization that care or other medical issues are beyond what caregiver can provide
- Caregiving role stays the same – level and type changes
  - Advocate/overseer of care

Family Caregiver Perspective

Maryann Powderly

Questions

The post test is now open. The post test must be completed by 2pm ET in order to receive CME or CE credit.

The evaluation is now open. The evaluation must be completed by 5pm ET in order to receive CME or CE credit.

Evaluation Form and Post-test

- Thank you for joining our webinar. Please take a moment to complete a brief evaluation on the quality of the webinar.
- If you are applying for CME/CE credit, you must complete the evaluation as well as the post-test at this time.
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